

What is claimed is:

1. Within a digital acquisition device with a built in flash unit, a method of perfecting the exposure of an acquired digital image using face detection in said acquired image, comprising:
 - (a) identifying a plurality of groups of pixels that correspond to plurality images of faces within said digitally acquired image, and determining corresponding image attributes to said group of pixels;
 - (b) performing an analysis of said corresponding attributes of said groups of pixels;
 - (c) determining to activate said built-in flash unit based on said analysis; and
 - (d) determining an intensity of said built-in flash unit based on said analysis.
2. The method of claim 1, further comprising an initial step of calculating image attributes on an entire said acquired digital image and comparing said image attributes to said image attributes said group of pixels.
3. The method of claim 2, said image attributes comprising exposure.
4. The method of claim 3, said exposure being calculated as a function of one or more parameters including aperture, speed, gain, or relative sensitivity, or combinations thereof.
5. A method of perfecting the exposure of acquired digital images using face detection in recited in claim 1, said groups of pixels of faces being given a certain weight based on weight criteria.
6. A method of perfecting the exposure of acquired digital images using face detection as recited in claim 5, said weight criteria being calculated based on a distance of said groups of pixels to the camera.
7. A method of perfecting the exposure of acquired digital images using face detection as recited in claim 5, said weight criteria being calculated based on relative sizes of said groups of pixels.

8. The method of claim 1, further comprising performing a pre-flash based on said calculated flash intensity to determine whether said analysis is accurate.
9. The method of claim 8, further comprising performing a second analysis based on said pre-flash.
10. Within a digital camera, a method of digital image processing using face detection for achieving a desired image parameter, comprising the steps of:
 - (a) identifying a group of pixels that correspond to a face within a digital image;
 - (b) determining first initial values of a parameter of pixels of the group of pixels;
 - (c) determining second initial values of a parameter of pixels other than pixels of the group of pixels;
 - (d) comparing the first and second initial values; and
 - (e) determining adjusted values of the parameter based on the comparing of the first and second initial values and on a comparison of the parameter corresponding to at least one of the first and second initial values and the desired image parameter.
11. The method of claim 10, the parameter comprising luminance, the method further comprising the step of automatically generating the adjusted digital image using the adjusted values.
12. The method of claim 10, the parameter comprising luminance, the method further comprising automatically providing an option to generate the adjusted digital image using the adjusted values.
13. The method of claim 10, the parameter comprising luminance, the adjusted values of the luminance being provided by a fill flash.
14. The method of claim 10, the parameter comprising luminance, the adjusted values of the luminance being provided by a digitally-simulated fill flash.

15. Within a digital camera, method of digital image processing using face detection to achieve a desired luminance contrast, comprising the steps of:

- (a) identifying a group of pixels that correspond to a face within a digital image;
- (b) determining first initial values of luminance of pixels of the group of pixels;
- (c) determining second initial values of luminance of pixels other than pixels of the group of pixels;
- (d) comparing the first and second initial values to determine an initial luminance contrast; and
- (e) determining properties of a fill flash for providing adjusted values of luminance for at least some of the pixels of the digital image based on a comparison of the initial luminance contrast and the desired luminance contrast.

16. Within a digital acquisition device with a built in flash unit, one or more processor readable storage devices having processor readable code embodied thereon, said processor readable code for programming one or more processors to perform a method of perfecting the exposure of an acquired digital image using face detection in said acquired image, comprising:

- (a) identifying a plurality of groups of pixels that correspond to plurality images of faces within said digitally acquired image, and determining corresponding image attributes to said group of pixels;
- (b) performing an analysis of said corresponding attributes of said groups of pixels;
- (c) determining to activate said built-in flash unit based on said analysis; and
- (d) determining an intensity of said built-in flash unit based on said analysis.

17. The one or more storage devices of claim 16, the method further comprising an initial step of calculating image attributes on an entire said acquired digital image and comparing said image attributes to said image attributes said group of pixels.

18. The one or more storage devices of claim 17, said image attributes comprising exposure.

19. The one or more storage devices of claim 18, said exposure being calculated as a function of one or more parameters including aperture, speed, gain, or relative sensitivity, or combinations thereof.

20. The one or more storage devices of claim 16, the method of perfecting the exposure of acquired digital images using face detection including said groups of pixels of faces being given a certain weight based on weight criteria.

21. The one or more storage devices of claim 20, the method of perfecting the exposure of acquired digital images using face detection including said weight criteria being calculated based on a distance of said groups of pixels to the camera.

22. The one or more storage devices of claim 20, the method of perfecting the exposure of acquired digital images using face detection including said weight criteria being calculated based on relative sizes of said groups of pixels.

23. The one or more storage devices of claim 16, the method further comprising performing a pre-flash based on said calculated flash intensity to determine whether said analysis is accurate.

24. The one or more storage devices of claim 23, the method further comprising performing a second analysis based on said pre-flash.

25. Within a digital camera, one or more processor readable storage devices having processor readable code embodied thereon, said processor readable code for programming one or more processors to perform a method of digital image processing using face detection for achieving a desired image parameter, comprising:

- (a) identifying a group of pixels that correspond to a face within a digital image;
- (b) determining first initial values of a parameter of pixels of the group of pixels;
- (c) determining second initial values of a parameter of pixels other than pixels of the group of pixels;
- (d) comparing the first and second initial values; and

(e) determining adjusted values of the parameter based on the comparing of the first and second initial values and on a comparison of the parameter corresponding to at least one of the first and second initial values and the desired image parameter.

26. The one or more storage devices of claim 25, the parameter comprising luminance, the method further comprising the step of automatically generating the adjusted digital image using the adjusted values.

27. The one or more storage devices of claim 25, the parameter comprising luminance, the method further comprising automatically providing an option to generate the adjusted digital image using the adjusted values.

28. The one or more storage devices of claim 25, the parameter comprising luminance, the adjusted values of the luminance being provided by a fill flash.

29. The one or more storage devices of claim 25, the parameter comprising luminance, the adjusted values of the luminance being provided by a digitally-simulated fill flash.

30. Within a digital camera, one or more processor readable storage devices having processor readable code embodied thereon, said processor readable code for programming one or more processors to perform a method of digital image processing using face detection to achieve a desired luminance contrast, comprising the steps of:

(a) identifying a group of pixels that correspond to a face within a digital image;

(b) determining first initial values of luminance of pixels of the group of pixels;

(c) determining second initial values of luminance of pixels other than pixels of the group of pixels;

(d) comparing the first and second initial values to determine an initial luminance contrast; and

(e) determining properties of a fill flash for providing adjusted values of luminance for at least some of the pixels of the digital image based on a comparison of the initial luminance contrast and the desired luminance contrast.